



Traditional Architecture of Kampung Tuan Mosque: Portrayal of societal sociology

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Abstract

Mosque architecture built to reflect the physical environment in which Muslim society manifest their religious devotion and way of living. This research attempts to discover the portrayal of societal sociology in traditional mosque architecture. It analyses the society religious devotion and beliefs manifestation in the design and construction of the traditional mosque. The case study method is applied, consisting of on-site building measurement, on-site observation, and interview with expert informants on the old Kampung Tuan Mosque. The findings from this research conclude a significant portrayal of societal sociology found in the aspect of design and construction of the mosque.

Keywords: Architecture, Traditional Mosque, Society, Sociology

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1.0 Introduction

Mosques have been the primary focal points of Muslim cities and have always represented the physical centres of Islamic society in general. Traditional mosque construction implies more than simply the physical attributes of a building method. It encompasses the society religious devotion and way of living producing the building. The study of architecture cannot be undertaken without an understanding of the society that produces it. The local cultures adapted to meet the Islamic values within the religious framework have meaningfully influenced traditional mosque architecture. Traditional mosques are designed to synchronize with the Islamic principle as the most potent driving aspect (Idham, 2021). Therefore, it is significant to identify and understand the societal sociology portrayed in traditional mosque construction to learn the relationship between society and its architecture. For this study, an example of a traditional mosque of a total timber material and construction at Kampung Tuan, built circa the 1830s were chosen. Kampung Tuan Mosque (KTM) is one of the oldest surviving timber mosques in Peninsular Malaysia near the town of Chukai in Kemaman, Terengganu. The mosque's foundation was laid by Sheikh Abdul Rahman Sheikh Abdul Samad al-Palembangi. The study will focus on the mosque design, including

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site planning, spatial planning and architectural elements and the construction, particularly in building materials, building components, and construction method to ascertain the relationship between societal sociology and its mosque. The study hopes to enrich the understanding of the traditional mosque and society that build it with the specific scope on design and construction as additional information to the body of knowledge.

2.0 Literature Review

2.1 Mosque Architecture and Society

As a Muslim majority nation, Malaysia has a diverse cultural and architectural style of mosques all over its country (Asif, Utaberta & Sarram, 2019). Mosques' design in Malaysia reflects the influences of different cultures both internally and externally, with blending elements exclusive to the area of its location, the available materials, and the overall architectural design of the era. Mosque designs also represent the architectural traits of varying societies and cultures, different colonialism periods, foreign influence, technological advancements, and political influences.

At the beginning of Islamic history, the concept of the mosque was direct and unpretentious. In its simplest form, a mosque is required to be built around a single horizontal axis, which is the *qibla* (Ebrahimi & Yusoff, 2018). It is a building with a simple structure for one purpose: to preach and practice Islam. The mosque was built with local materials, and the size depended only on traditional technology without any relation to the other factors. Contextualism in mosques barely existed in traditional times (Utaberta & Rasdi, 2017). The mosque was more in tune with society sociology as there were no religious institutions to dictate specific rules and regulations. Instead, it is under the rules and behavioural conduct set by the religious teacher and its society.

2.2 Society Sociology Towards Architecture

The connection between architecture and society is related to one another — our way of living influences our physical environment. People make places where they do things in their lives, and the organization of these places is related to their beliefs and aspirations (Unwin, 2009). In this context, Muslim communities have permanently been attached, one way another, to the mosque. The mosque is not only a place to perform prayers and supports community activities. It also represents the sense of belonging and identity of the community (Abdel-Hady, 2010). Being surrounded by a natural and familiar setting is part of the essential factor that can bring humankind closer to their Creator (Jaffar, Harun & Abdullah, 2020). Therefore, the act of building a mosque represents the establishment of a Muslim community. It is a building that portrays the characteristics of Muslim society and becomes a foundation in a community.

The sociology relation between the society and their mosque is significant, which is evident in the example of the *Quba* Mosque. A mosque is a place where the Islamic civilization started and serves as the traditional place of worship with a multi-role in human development and society, in terms of spiritual, physical, and educational activities (Hizan, Ismail & Ispawi, 2017). The mosque supports the Muslims' way of living by providing the spaces to execute their activities. Eventually, the community needs, social, cultural, and the environment will constantly evolve; therefore, the mosque transformation will never meet these needs. However, the design of a mosque should maintain its primary function, which is to be a Muslim community centre that became the symbol of unity of the country (Sojak & Dalila, 2019).

3.0 Methodology

3.1 On-Site Building Measurement

With the help of an assistant and villagers, the building components were measured, including the structure, roof, wall, floor and openings using the measuring tape with a ladder for higher locations of the building structure. Photos and dimensions were taken on each component together with sketches of its joinery system. The measurement of KTM building components is intricate and laborious as most of the same member components have different sizes. Precise and complete scaled drawings were necessary to understand and analyze the buildings' components and construction. The drawings opt to be drawn and documented by AutoCAD applications.

3.2 On-Site Building Observation

During the site visit, the observation of the site and building is carried out. On-site observation involves investigation and evaluation throughout the mosque's interior and perimeter. The appraisal was done towards the site surrounding and the building components. For KTM, it includes the tour around Kampung Tuan escorted by the villagers. Three (3) aspects are emphasized in the mosque observed; building appearance, the general aspect of building form and site context, and building components and their materials and finishes.

3.3 Interview

The interview session was conducted to gain information on; background of the mosque, communal activities conducted, community participation in the maintenance and construction stages of the mosque building. There is the opportunity to interact with some villagers and chat with them, especially about the mosque background, communal activities, and maintenance work held in the mosque. The information on construction methods and stages are gathered from relevant experts, the building conservator, Encik Nasir Baba from *Jabatan Warisan Negara* and the museum curator, Encik Iesnordin Hj. Malan due to difficulty finding practising Malay *tukang* (master-builder). Their knowledge and experience are valuable in describing and validating traditional building's construction methods

and stages. From the information given, the sequences of construction stages are prepared using the AutoCAD application. Both expert informants then validate the drawings.

4.0 Findings

4.1 Mosque Design

4.1.1 Site Planning

Muslim worshippers must perform ablution towards the state of purification of themselves as part of prayer ritual. Traditionally, the river is the primary source of clean water for ablution. It shows the significance for the KTM to be situated nearby the water source. From the observation at Kampung Tuan vicinity, it is identified that KTM is situated approximately 50 meters from the Limbong River, close enough for worshippers to conduct the ablution ritual. Apart from that, the KTM is surrounded by local dwellings, making it easily accessible and reachable within walking distance (as shown in Fig. 1). It shows that the selected location of KTM plays an essential role for it to be fully utilized by the community.

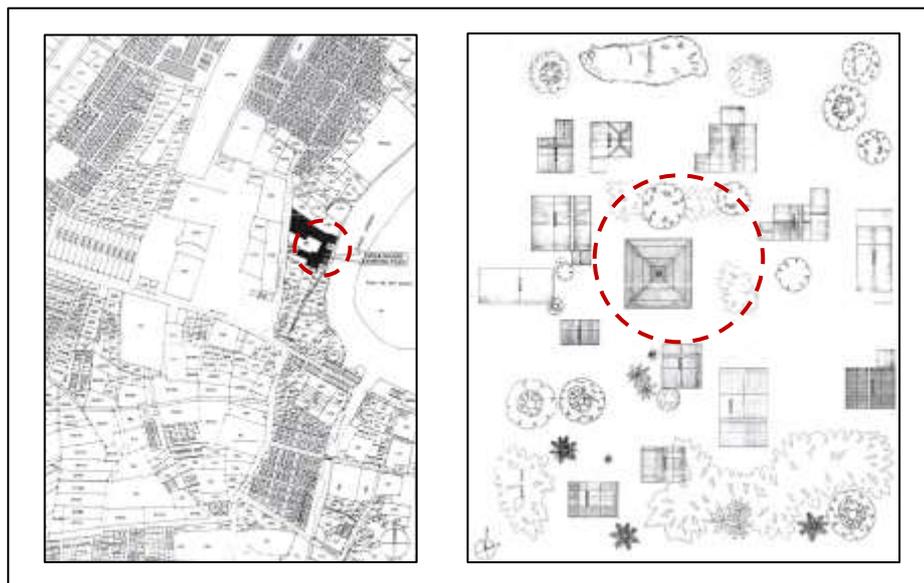


Fig. 1: KTM location and site compound
(Source: Author)



Fig. 2: Communal activities at the mosque compound.
(Source: Author)

The mosque's surrounding area is habitable by the dwellers and lived with various kinds of vegetation. According to the villagers, traditionally, vast open space surrounds the mosque, which now turns into the veranda area. The spacious mosque compound is very much needed. It was designed to be frequently used by the local community for an annual celebration such as *Qurban* and is the centre

for villagers' gathering place for various religious activities, discussions, and occasions (as illustrated in Fig. 2). Today, there are still various communal activities held in the mosque and its surrounding compound. It shows the relevance of having functional space for community gatherings.

4.1.2 Spatial Planning

The KTM are a small and modest in size single-storey building. The physical measurement of the building reveals that the total floor area is approximately 794 square feet. The size of the floor area complied with the primary compulsory number of 40 adult male congregants as ordered by the Islamic *Shariah*, especially during the Friday congregational prayer. The traditional mosque was designed with the essential liturgical space of the main prayer hall and a concave *mihrab* (niche) to fulfil the congregational prayer ritual.

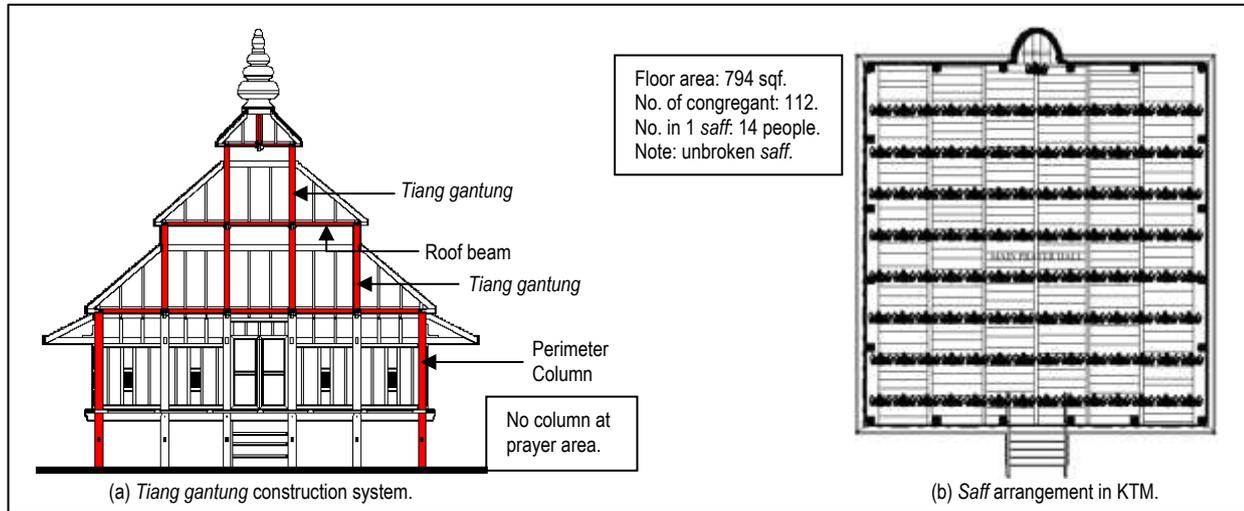


Fig. 3: Spatial planning of KTM
(Source: Author)

Initially, the KTM has only one formal entrance to the prayer hall by an attached wooden staircase for the male congregants, as narrated by the villagers. Traditionally, female congregants only attend the mosque during the Islamic Eid prayers. It somehow shows why the KTM's entrance for female congregants is not visibly defined and is less critical to the building. However, it is said that the ladies can reach the prayer hall by entering from beneath of floorboards (as illustrated in Fig. 4a). It explains the design of floorboards detached from the floor joists (as shown in Fig. 4b). Through measurement on each floorboard, it was found that some boards are smaller in size at a particular area of the hall to make it easy to lift from beneath. On any occasion requiring women to attend the mosque, a curtain veil will be placed to separate them from the male congregants as necessitated by the Islamic *Shariah* — the curtain aids to isolate the single prayer hall into two visually and cover the female *awrah*.

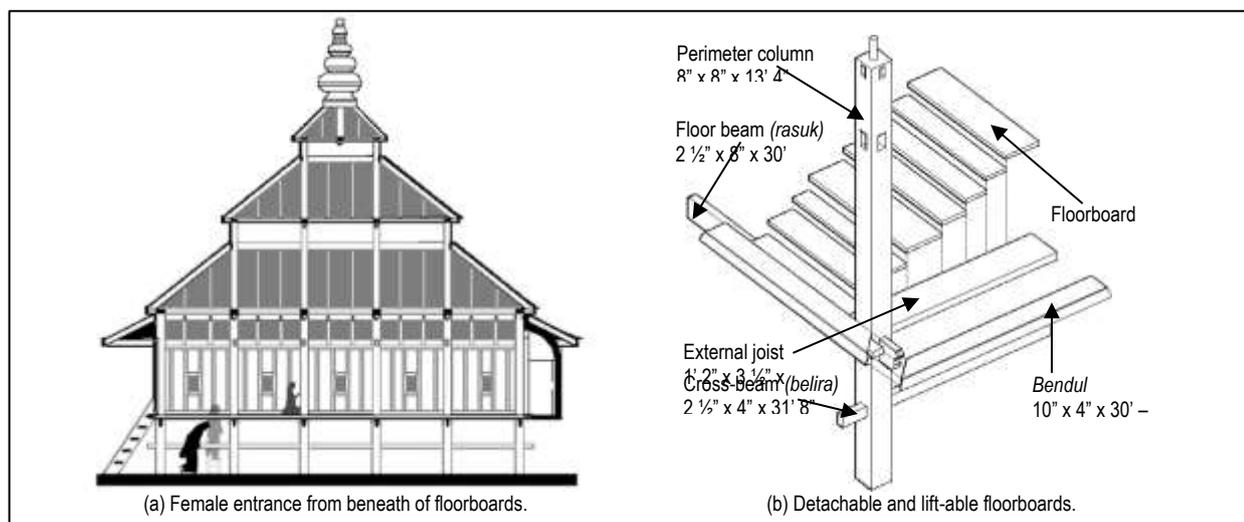


Fig. 4: Floor design of KTM
(Source: Author)

The observation identified that the KTM possessed no interior columns inside the prayer hall, which rarely happens in traditional mosques. Comparative assessments with other *Malay* traditional buildings reveal that this particular mosque uses a unique timber 'space frame structure' known locally as the *tiang gantung* (literally translated as a suspended column) system (as shown in Fig. 3a). The absence of the column is advantageous for the KTM when the *saff* (shoulder to shoulder in a straight line) of congregants is ordered continuously without interruption (as shown in Fig. 3b). This condition fulfils the desire for an unbroken line of *saff* as highly encouraged by the Islamic *Shariah*.

4.1.3 Architectural Elements

The site observation shows that the KTM is sited to blend with the surrounding local houses and as a focal point in the vicinity. It supports by measuring the height from the ground to the tip of copper *mastaka* (finial), at 37' 10". Traditionally, being fishers are typical living for the locals. Therefore, the need for direction from the sea to the village jetty is highly significant for them. As told by villagers, the copper *mastaka* that shined during daytime and sometimes at night with the moonlight aids local fishers and sailors to provide a direction to the river's estuary. The mosque is the tallest building built during the 1830s; thus, it is easily identifiable as a landmark (as illustrated in Fig. 5).



Fig. 5: KTM as a focal point in Kampung Tuan vicinity.
(Source: Author)

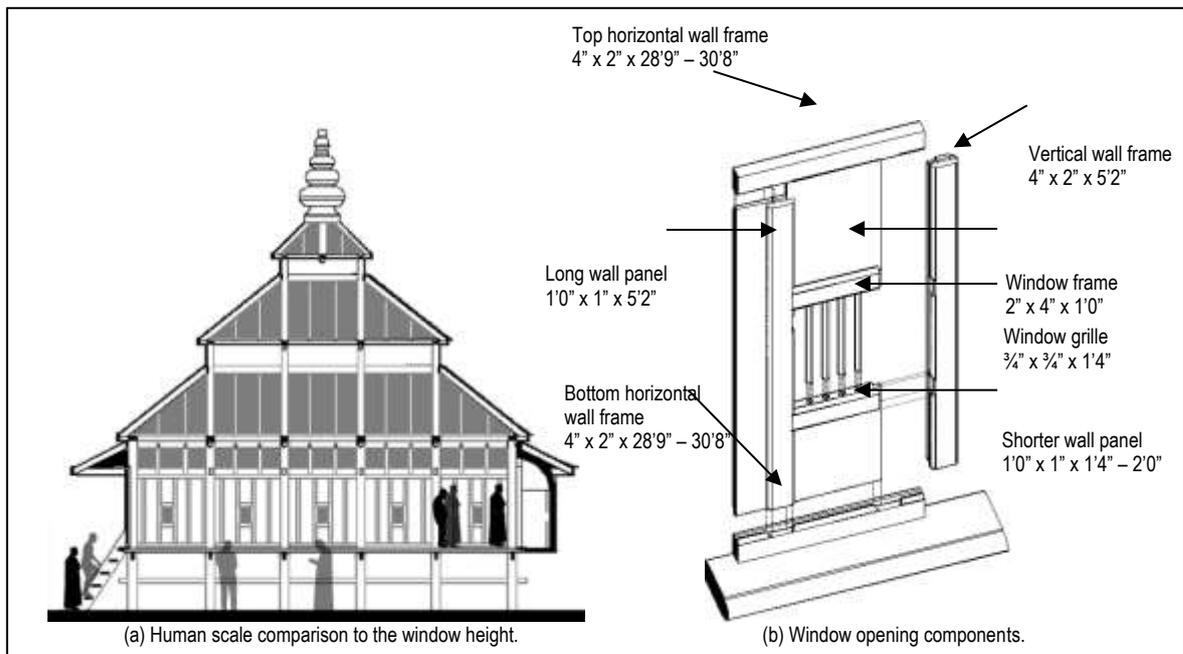


Fig. 6: Height of KTM window opening from the ground and components.
(Source: Author)

In KTM, window openings function as a medium to allow visual communication between the users and permit the emission of daylighting and ventilation into the mosque interior. However, the window's opening is only 1' 0" width by 1' 6" height in size (as shown in

Fig. 6b). It is relatively small compared to the standard size of window openings. Observing a person standing next to the window makes the person's head much higher than the opening level. It helps to avoid any form of distraction or communication while performing the prayer. It relates to the congregant's obligation to surrender themselves solely to God and left the worldly behind during the prayer.

The KTM floor was raised from the ground level to the main payer hall area at 4' 8" in height. It was built on timber stilt to avoid flood as the building is near the riverbank and ensure its cleanliness. The height helps limit the congregant's communication or distraction during prayer from people outside the building (as illustrated in Fig. 6a).

4.2 Mosque Construction

4.2.1 Building Materials

Materials used for the KTM are *cengal* timber which traditionally is readily available in the surrounding vicinity. Villagers stated that the wood was chopped from Bukit Kuang in Kemaman by the master-builder and his apprentices. The hill is located few kilometres to the north of Chukai. There is a probability that the log was floated along the Limbong River to get to the site. According to Encik Nasir Baba, due to the problem of bringing out timber to the riverbank in those days, they were probably cut into sections so that the buffaloes could pull them easily.

As the primary building materials in the traditional mosque, timber employed low technology tools made by the locals to produce, fabricate, and install, allowing the local community to conduct the task due to the similarity of local dwelling production. Materials are trimmed into required sizes using traditional tools for construction. The components prepared are human-made products and slowly produce that allows for community participation in the building process.

4.2.2 Building Components

The main structural components of the KTM were fabricated earlier before the building execution. The components are produced by the local master-builder and his apprentices using a simple method and locally understood assembly system and joinery. Narrated by Encik Iesnordin Haji Malan, the components of the traditional mosque are made lightweight, lift-able and easily transportable by human lifting. It allows participation from villagers (low skill workers), which is highly needed in the erection of more extensive building components at the early stage of construction (as illustrated in Fig. 7).

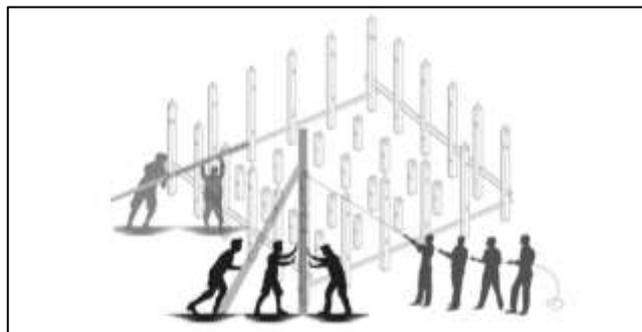


Fig. 7: Erection of bigger building components with the help of villagers.
(Source: Author)

Close observation of the KTM components reveals that they are easily replaced without disturbing the main structure due to the applied modular system (as shown in Fig.8). The local community can repair and restore building components as the components and installation method is similar to other domestic building construction. The modular components are easily assembled and dismantled as the joinery method is simple and understood by most. Another incredible feature of the KTM construction is that the mosque was built without a single nail but by the traditional *tanggam* and *pasak* (mortise and peg) joinery method, reflecting the local builder's ingenuity.

4.2.3 Method of Construction

In Islam, aside from daily prayers, fulfilling social responsibilities such as building a mosque constitutes an act of worship. The process of traditional building erection entangles complex activities related to religious and local technological aspects. As for KTM, the phases of building construction and materials were similar to the local dwelling architecture, as validated by expertise (as shown in Table 1). Thus, it allows the participation of local builders and the community, so do the mosque's future maintenance.

Building a mosque is a community responsibility that involves the local builders and congregants. Besides, it is a community way of living to do things together to strengthen their fraternity. The process requires expertise, such as the master-builder and other dwelling component makers and apprentices (as shown in Fig. 9). Though the master builder was the leader, assistance from the apprentices and the local community is still needed during construction. As affirmed by Encik Nasir Baba, generally, the master-builder possesses almost all the basic knowledge about building construction. However, several building parts may require specialized services, such as roof finishes, walls, staircases and various decorative components. Due to the modular concept of construction, some of the components were prepared in advance.

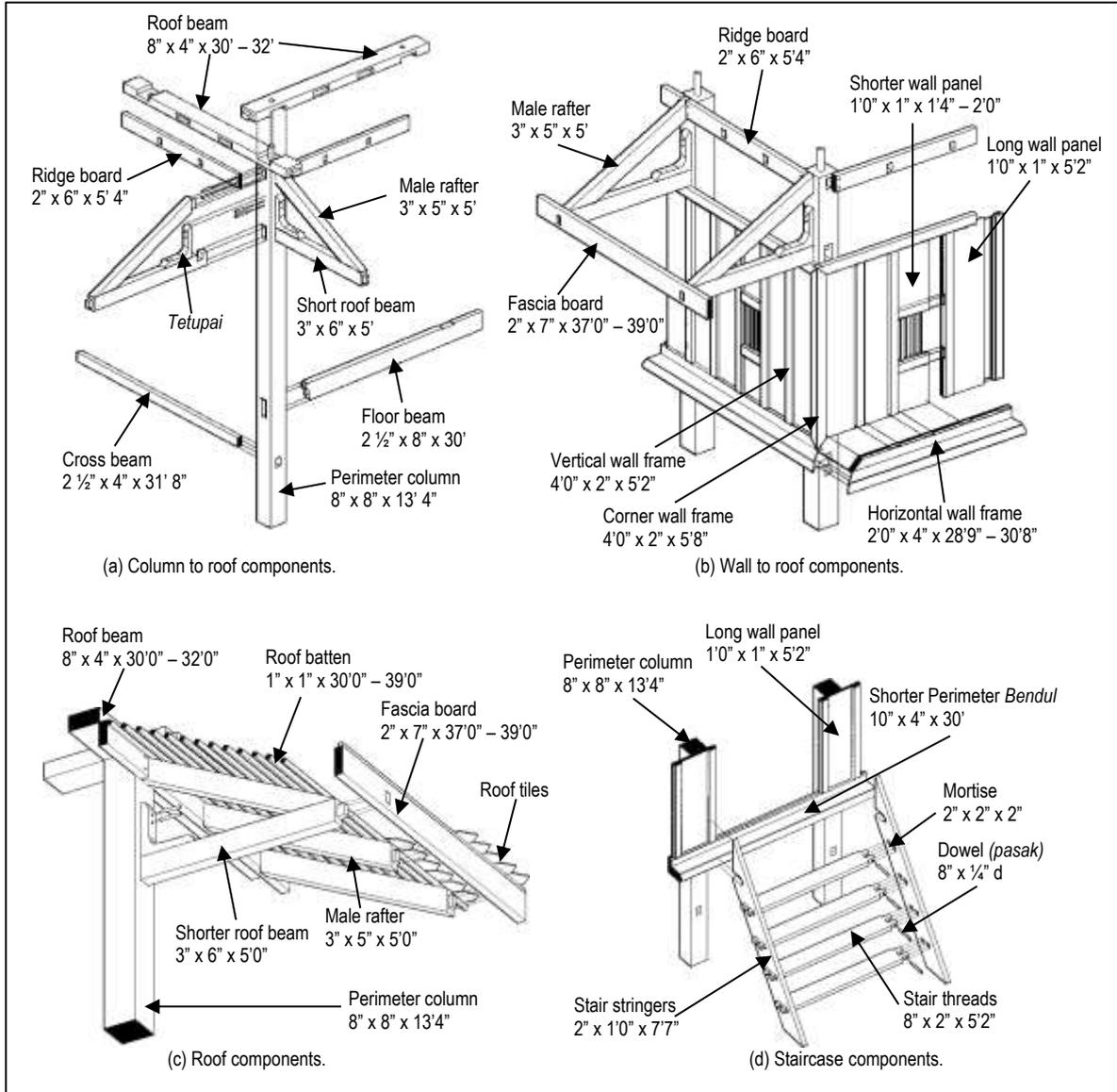


Fig. 8: Size of KTM modular building components. (Source: Author)

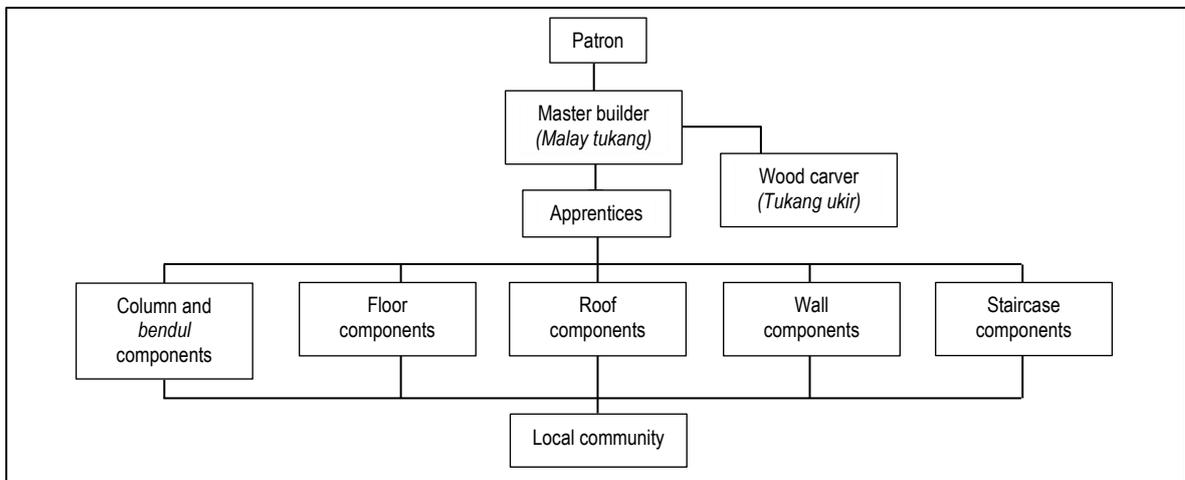
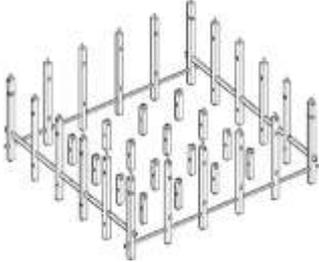
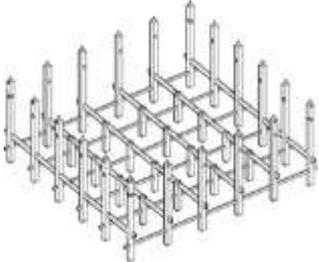
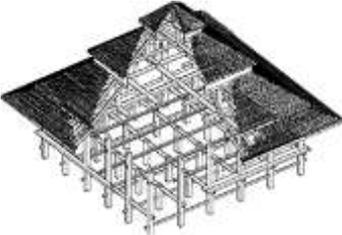
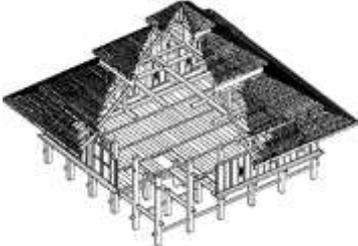
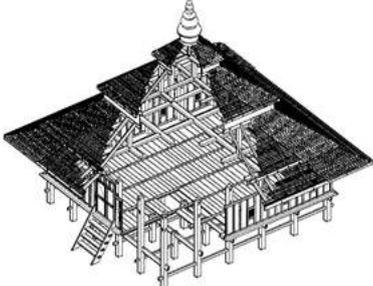


Fig. 9: The work force organization structure of the KTM. (Source: Author)

Table 1: Construction stages of KTM

STAGES OF CONSTRUCTION	KTM BUILDING PROCESS	
Pre-building construction work	<ol style="list-style-type: none"> 1. Selecting the site. 2. Acquiring materials from the jungle. 3. Site clearance/preparation. 4. Preparing building components from local raw materials (modular components). 	
Erection of the building	<ol style="list-style-type: none"> 1. The setting up of the grid and erection of the 20 perimeter columns. 2. The perimeter floor beam and crossbeam will be slipped into position to tie up the perimeter columns. 3. The 16 units or 4 rows of supporting columns will next be erected. 	
	<ol style="list-style-type: none"> 4. Four rows of floor beams were placed into the mortise hole of each column in a row. 5. The 4 rows of crossbeams were fixed into the opposite direction, through the 2 perimeter columns and 4 supporting columns. 	
	<ol style="list-style-type: none"> 6. The first, second, third and fourth layer of roof structure is constructed. 7. Laying the roof tiles begins from the eaves and progresses upwards to the apex. 8. The external joists were placed at two sides of the mosque. The other five internal joists placed onto the floor beams. 9. The <i>bendul</i> were placed surround the perimeter wall at the external side. 	
	<ol style="list-style-type: none"> 10. The wall and wall opening (door and windows) components of the building are constructed. 11. The floorboards were placed in between the floor joists. 	
	<ol style="list-style-type: none"> 12. The prefabricated staircase was attached to the <i>bendul</i>. 13. The final stage would be placing the <i>mastaka</i> made of copper up to sixth layers. 	
Completion of building	<ol style="list-style-type: none"> 1. <i>Kenduri</i> (socio-religious feast). 	

(Source: Author with validation by expertise)

5.0 Discussion

5.1 Mosque Design

The KTM is situated at a very significant location in the village vicinity to meet the purpose of the early settlers as the religious and communal centre. The site selection allowed congregants to perform the ablution according to religious requirements. The mosque is located within reachable walking distance from the congregants' dwelling. The spacious mosque compound was necessary for the villagers to conduct religious and cultural activities. The locals significantly embraced the idea of togetherness in performing community events.

The KTM is modest in size, and the spatial components are minimal. It complies with the liturgical requirements for Islamic congregational prayer activities. The prayer hall possessed no internal column, which allows the uninterrupted *saff* during congregational prayers as encouraged by the Islamic Shariah. The unique female entrance was designed from beneath the floorboard to the allocated praying space covered by a curtain veil to shield the awrah guided by the Islamic doctrine.

The placement of copper *mastaka* at the roof of the highest building in the vicinity helps guide local fishers to enter the river's estuary from the open sea. The window openings represent an excellent understanding of Islamic spiritual needs that require congregants to be secluded from worldly communication while performing prayer. Small size opening and the low window placement allow congregants to focus on self-surrender to God. A higher floor level helps limit distractions that may occur from outside the building. The architectural traits of KTM indicate societal sociology influence and reflecting the builder's ingenuity.

5.2 Mosque Construction

Building materials of the KTM were acquired from the local resources in the surrounding vicinity. As the timber materials are commonly used in the local dwelling building, it allows community participation. Even though the master-builder and his apprentices prepare to build components, help from villagers is highly needed — this activity act to strengthen the bonding among villagers.

Most villagers easily understand traditional building components' assembly systems and joinery. It is similar to the dwelling construction method. The size of building components is lift-able and easily transportable by human lifting. Therefore, it allows participation from the local community during the building erection. The components designed to be modular and without nails quickly replace when rotten and reflect the local builder's ingenuity.

The erection of KTM interweaves religious and cultural beliefs. In Islam, building a mosque is an act of worship that is demanded from its believers. It is also one's fulfilment of social responsibility as a community. Hence, most villagers are willing to take on any task within their capability during the mosque construction.

6.0 Limitation of Study

The limitations of this study are the non-availability of essential respondents; for example, the *Malay tukang* and village elders are expected. Besides, as for the centuries-old traditional mosque, there is an apparent shortage of secondary data on the specific areas such as the building construction stages. Therefore, information from building history experts is required.

7.0 Conclusion and Recommendation

The design and construction of KTM is a community creation that portrays the society sociology influence. It shows how societies' religious devotion is a guide to the manual product. The building erected is exceptionally well designed to suit the congregants' needs, in line with the requirement by the Islamic *Shariah*. The location of the building, the modest size of floor area, the design of uninterrupted interior space, the floor design as an entrance for the female, and the small size of window openings portrays the adaptation of Islamic doctrine in designing the mosque, which highlights the local builder ingenuity. Besides, building and maintaining a mosque is a communal activity encouraged in Islam. It is deemed part of an act of worship in the religious structure (Radwan, 2020).

The KTM building also reflects society way of living. The mosque's location is easily accessible within walking distance — good accessibility and the strategic location influence the community to attend the mosque (Jaffar, Harun & Abdullah, 2020). The design of a large compound, the copper *mastaka*, and the raised floor portray community needs. In mosque building, the community can contribute their time, energy and skills during the mosque construction. The mosque became a platform to mould society and human development within the local community context, instilling and reinforcing community bonding (Wahab et al., 2017). Community involvement in the traditional mosque construction process also instils more profound interest and motivation to ensure a sustainable measure to maintain and preserve the mosque structure (Aziz & Zulkifli, 2018).

Even though it is almost impossible to return to the traditional building methods, we can learn from traditional construction by using local building materials, modular construction methods, and community participation during the construction and maintenance. Local communities nowadays should be allowed to participate in their mosque building and maintenance phase. However, adequately outlined local's involvement phases should be conducted.

This study can be extended to the other traditional mosques in Malaysia concerning the research objective. Various mosque typologies are built in different states by a different local community set, reflecting different cultures and ways of living.

Acknowledgement

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Paper Contribution to Related Field of Study

By exploring the past's built environment, there are many discoveries and understanding of social values' effects on their mosque architecture. This work compliments many of the existing studies and descriptions of the architectural aspect of mosques. The study of the traditional mosque is essential for understanding the mosque building construction at different times. Therefore, it is vital to honour the cultural traces in the traditional built environment.

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